TEKTURON
MULTITAP SEQUENCED DELAY

d16 group AUDIO SOFTWARE

User Manual

Requirements

Software and hardware requirements of the product

⊞ Windows PC

OS version Win 7, Win 8, Win 10
CPU 2.8 Ghz with SSE (Multicore system 3.2 Ghz recommended)
RAM 4 GB (8 GB Recommended)
Software VST / AAX compatible host application (32bit or 64bit)

Mac OS X

OS version OS X 10.7 or newer
CPU Intel based 2.8 Ghz (3.2 Ghz recommended)
RAM 4 GB (8 GB Recommended)
Software AU / VST / AAX compatible host application (32bit or 64bit)

Overview

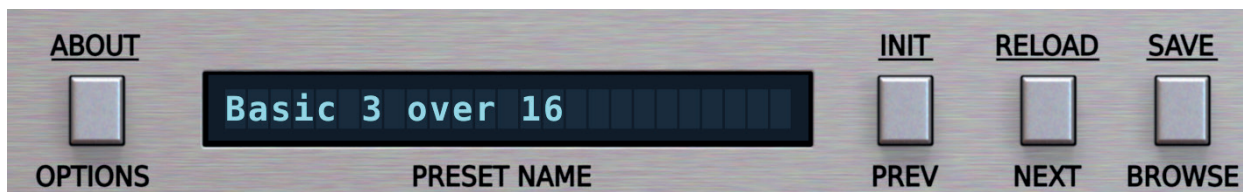**Tekturon** is a multi-tap delay effect with **16** independent delay lines.

When the plug-in is loaded, its graphic interface appears:

Tekturon's graphic interface

There are two main sections on the interface:

- **Configuration and Preset management** section:

Configuration and Preset management section

- All the remaining controls are in the **Signal processing**.

Signal Flow

At the core of **Tekturon** are **16 delay lines.** The time delay between subsequent taps is equal and controlled by a single parameter – the **Time Grid**. The taps are labeled by numbers **1** to **16**. The signal flowing into tap 1 is not delayed relative to the dry signal. **Tap** number **2** is delayed by the value of the **Time Grid** and **tap** number **3** is delayed by twice the value of the **Time grid** and so on up to tap **16** (which is delayed by **15 times** the **Time grid** value).

Each delay line also has its own independent feedback loop and an effect chain processing the signal output from the loop.

A delay line FX chain consists of:

- **Multimode filter** with adjustable **Cutoff** and **Resonance**
- Stereo **Panning**
- Stereo **Spread**
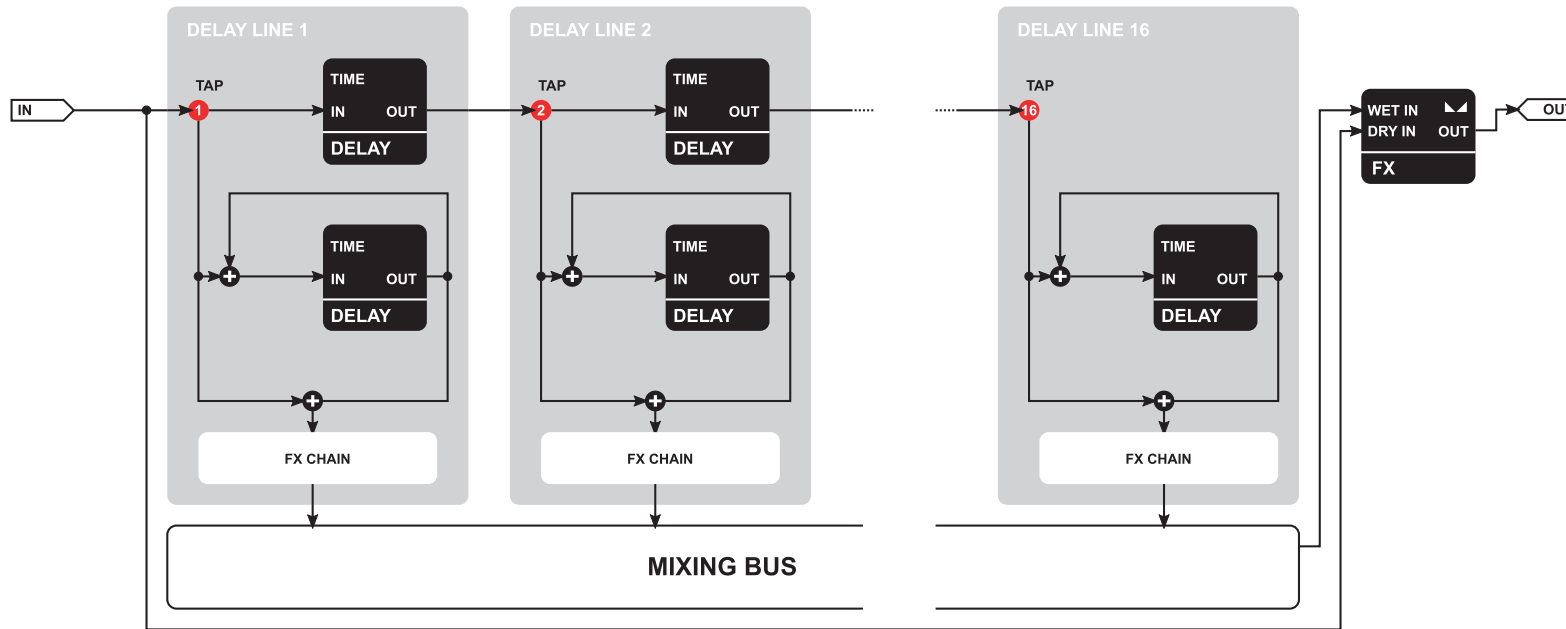
Schematic diagram of processing path in Tekturon
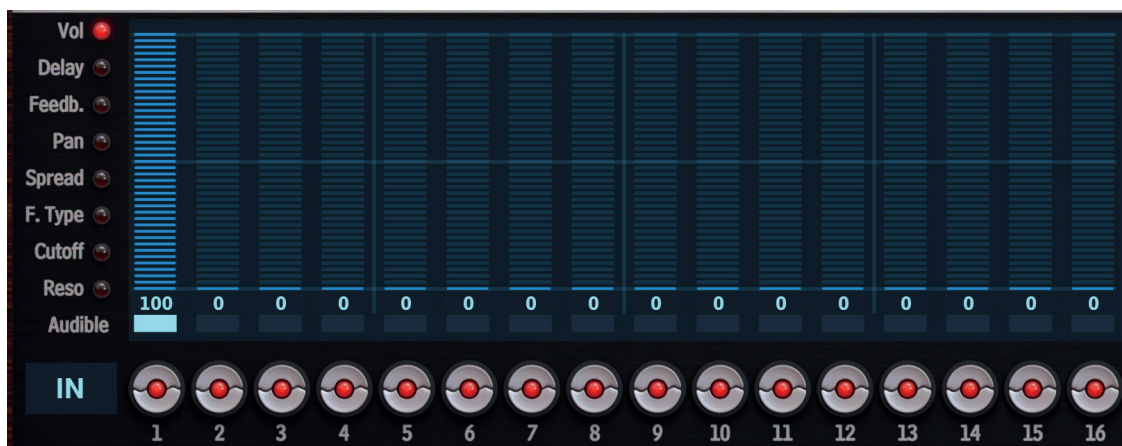
Bi-level control of the effect

The plug-in is controlled hierarchically:

- *Globally* - From the **Master** section, where the delay lines are all altered at once

Master section

- *Locally* - By adjusting each of the delay line parameters individually using the **bar graph display** situated on the left side of the GUI.

The Bar graph display

The parameters set *globally* from the **Master** section are:

- **Base value** – A reference point for the relative values (offsets) set *locally* and individually for each delay line. This is the case for:
    - **Multimode filter Cutoff**
    - **Multimode filter Resonance**
    - Delay loop **Feedback** value
- **Parent value** – A default value, which can be overridden by the local value; specific for the particular delay line. This happens for
    - **Multimode filter type**

Some of the delay line parameters do not have global counterparts in the **Master** section. They are controlled individually per delay line from the **bar graph display**. This applies to:

- Stereo **Panning**
- Stereo **Spread**

Certain parameters can only be controlled globally (they cannot be adjusted per delay line). These are:
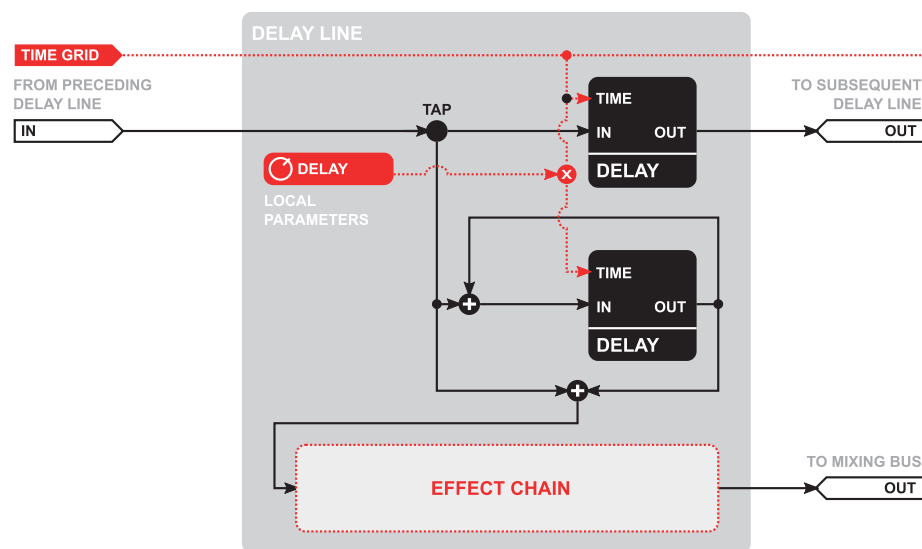
- **Shuffle**
- **Time grid**

Unit delay value – the Time grid

The **Time grid** is a *global* parameter which controls:

- The delay time between subsequent **Taps** – their time spread.

- It is also the base value of the delay time for all delay line feedback loops. Effective delay time for a delay line is defined as multiple of the **Time grid** in a range x**1** to x**16**:

Effective Loop Delay= N*Time Grid

Delay time in an individual delay line

The parameter value is controlled from the **Time grid** section on GUI:

The Time grid parameter

It is expressed in *milliseconds* and controlled in a range from **1** to **500** *[ms]* (when **Sync** mode is disabled). The value can be adjusted by dragging the up-down mouse pointer above the digits representing the consecutive decimal positions on the display.
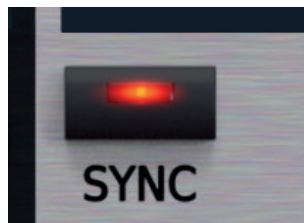
Tap function

Tap is used to set the delay time *"by ear"* by clicking **Tap** rhythmically. The plug-in measures the time between the consecutive clicks, averages it and sets it as a new delay time. This function is also available when tempo **Sync** is enabled or disabled.

Tap button

Host tempo synchronization

Sync toggle button:

Sync button

This activates / deactivates the synchronization of the **Time grid** with the host (DAW) application tempo. When enabled, the delay is represented as a **Rhythmic value** (in tempo-dependent units) consisting of a **Note value** and a **Rhythmic modifier.** Note, when this mode is active the **Time grid** value is controlled in a different manner and the look of the **Time grid** display changes slightly.

Time Grid section when Sync is active

Note values

The **Time Grid Note value** can be adjusted by dragging the up-down mouse pointer over it;

Available values are: **1/8**, **1/16**, **1/32** and **1/64**

Rhythmic modifiers

Clicking a **Rhythmic modifier** selects it:
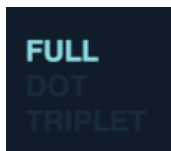
There are 3 possible values to choose from:

- **Full** – Effective delay value is equal to set **Note value.**

- **Tri** - Effective delay value is equal to **2/3rds** the duration of set **Note value.**

- **Dot** - Effective delay value is equal to **3/2nds** the duration of set **Note value.**

Delay lines

Tekturon has **16** delay lines - each with its own feedback loop and effect chain processing the signal output from the loop:
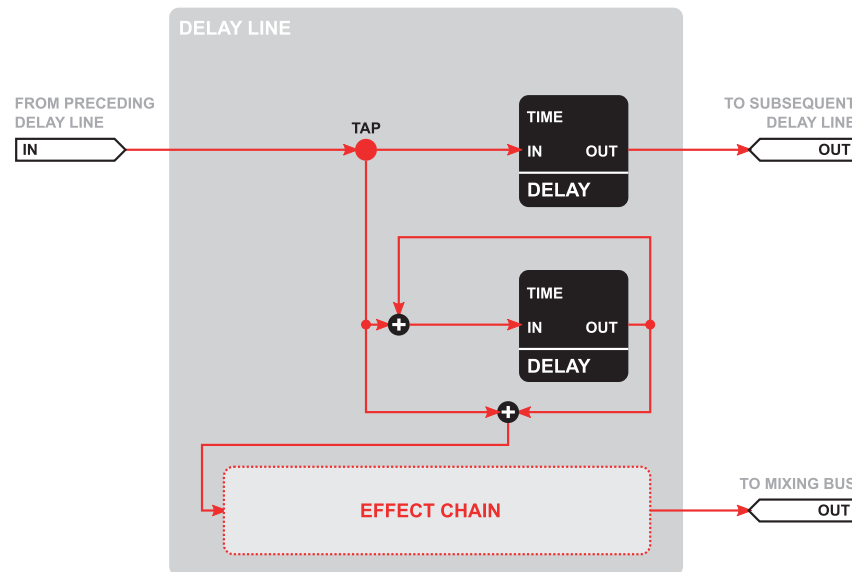

Individual Delay line in Tekturon

A single delay line is fed from the **Tap**. This is delayed with respect to the **Dry** signal by a value proportional to **Tap's** index value (subsequent **Taps** are delayed from each other by the value of the **Time grid**).
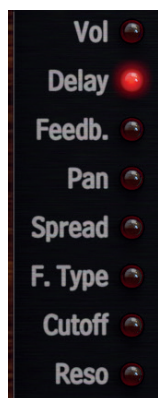
Delay value in the feedback loop

The feedback loop delay is expressed as the multiple of the unit delay value (the **Time grid**). It is set for each of the **16** delay lines independently using the **bar graph display** to the left:
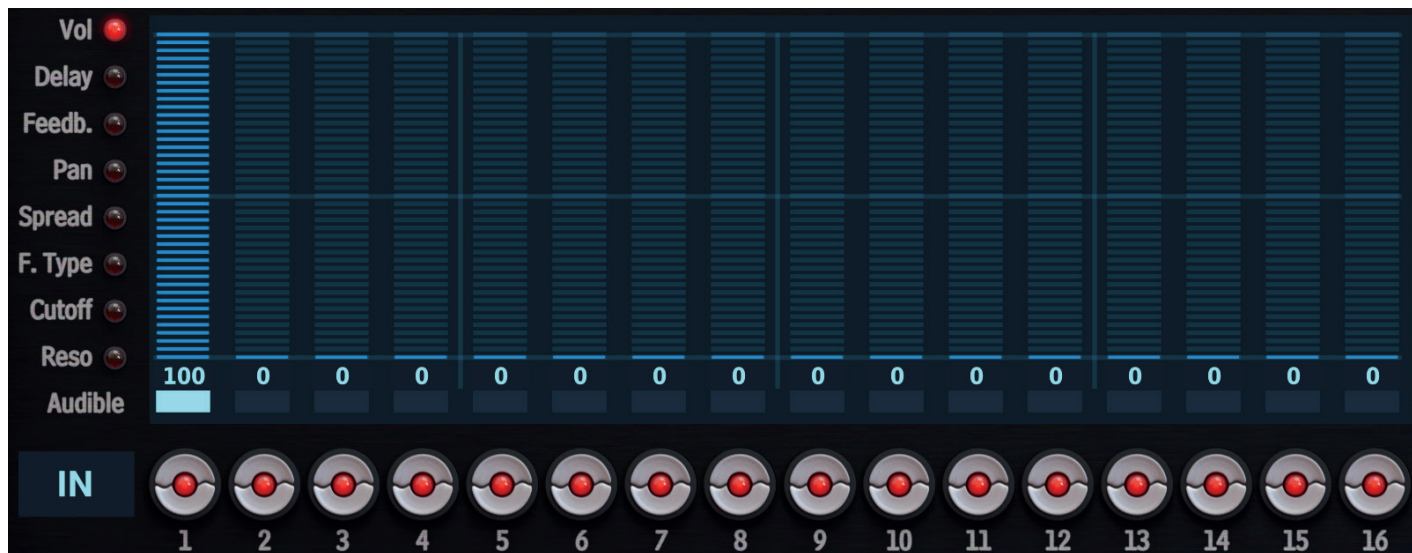
The Bar graph display

To edit delay values first switch to the **Delay** view using **View Selector:**

View Selector

The adjustment is performed by mouse clicking / dragging the vertical bars corresponding to the particular delay lines. The vertical position of the click represents the value. The bars are arranged so the delay lines' indexes corresponding to them start from the left side of the display (**1** to **16**):
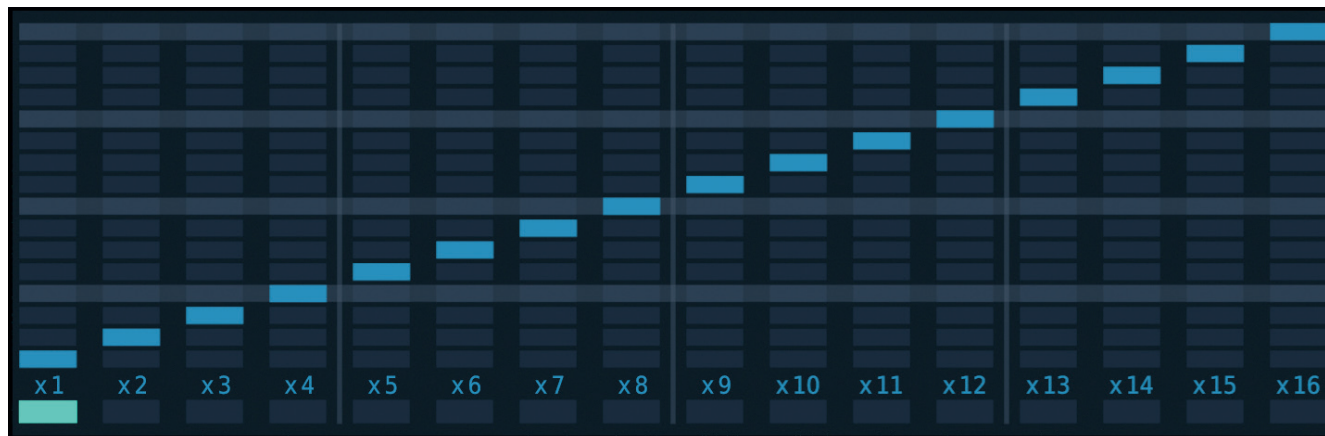
Delay values for all delay lines

The numeric representation of each bar is shown in the bottom row:
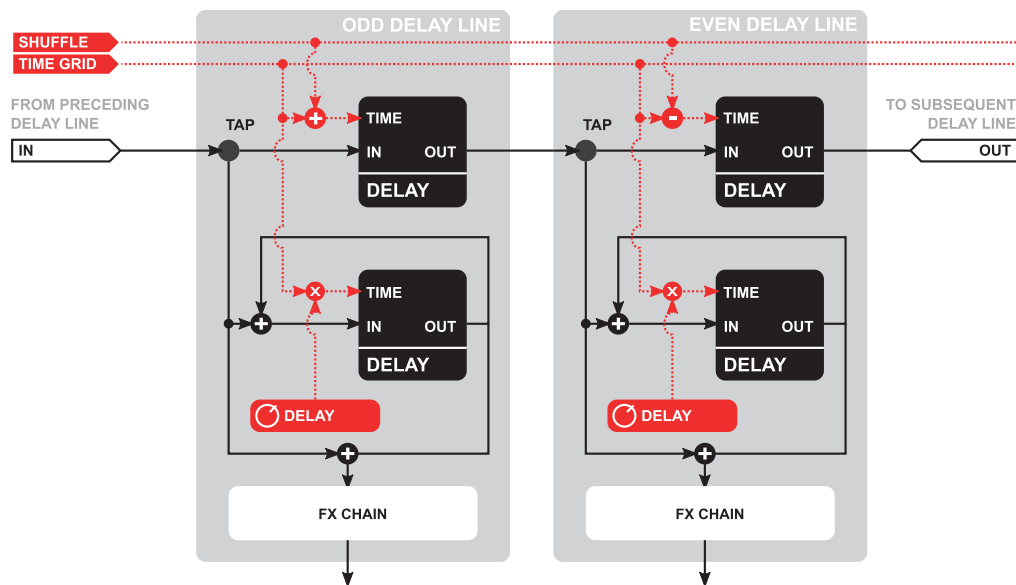

Delay values for all delay lines

Delay value (the multiple of the unit delay value – **Time grid**) can be picked from the range **x1** to **x16**.

Shuffle

Shuffle parameter

The **Shuffle** parameter introduces additional delay before each even numbered **Taps** and reduces the delay before odd numbered **Taps** by the same amount:

Influence of the Shuffle parameter on the delay times.

This causes a swing effect between the bounces output from consecutive delay lines. The **Shuffle** parameter controls the strength of the effect.
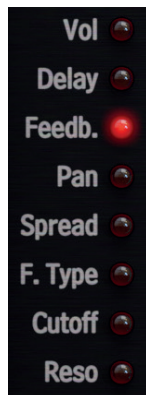
Feedback

Feedback is controlled hierarchically. At a *global* level, using the **Feedback** parameter in the **Master** section affects the **Feedback** value in all delay lines at once:
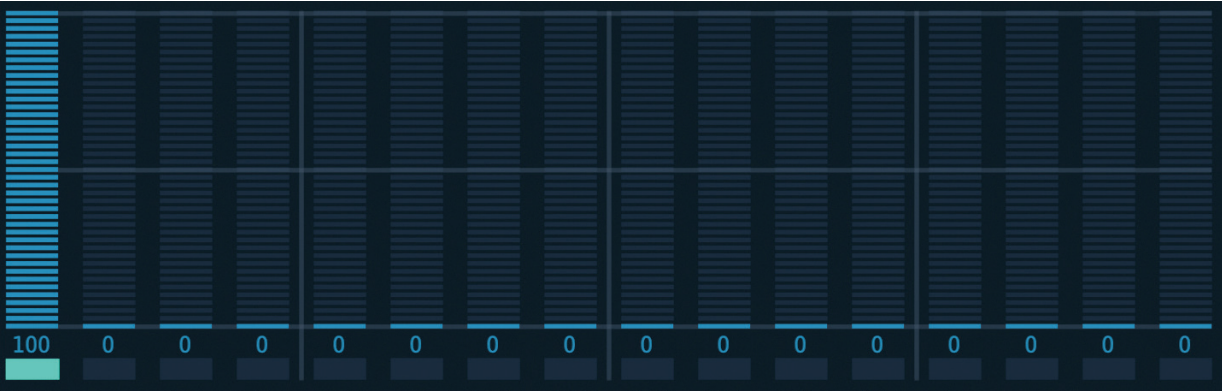
Global Feedback parameter

It can also be adjusted locally using the **Bar graph display** by selecting **Feedb** using the **View Selector:**
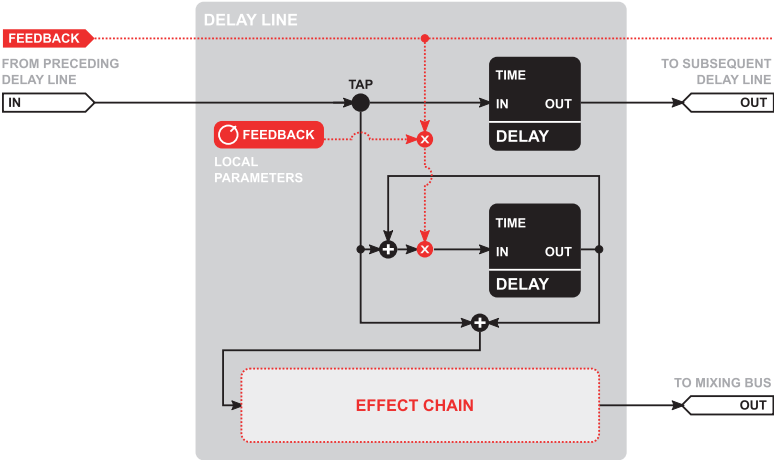
View Selector

The *local* **Feedback** values in the delay lines can then be adjusted individually:

Individual Feedback values

The effective (actual) feedback value for a particular delay line is equal to the value of the global **Feedback** parameter (from the **Master** section) limited by the amount set locally using the **Bar graph display.**

*Feedback value in a single delay line*

Mute Tap 1 Direct Signal

Mute Tap 1 Direct Signal switch:

Mute Tap 1 Direct Signal

When enabled, the zero numbered bounce (non-delayed signal) output from the first delay line is muted. This prevents overlapping it with the unprocessed (**Dry**) signal. This is a useful option when **Tekturon** is used as insert effect in situations where the **FX** (dry->wet) value sets the **Dry** signal as well as for cases where the plug-in is used on FX send track.
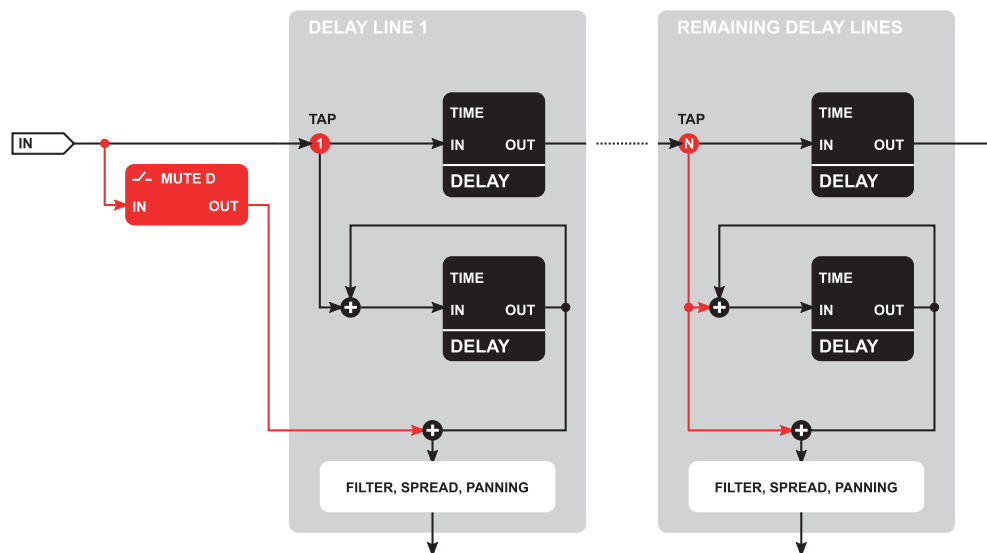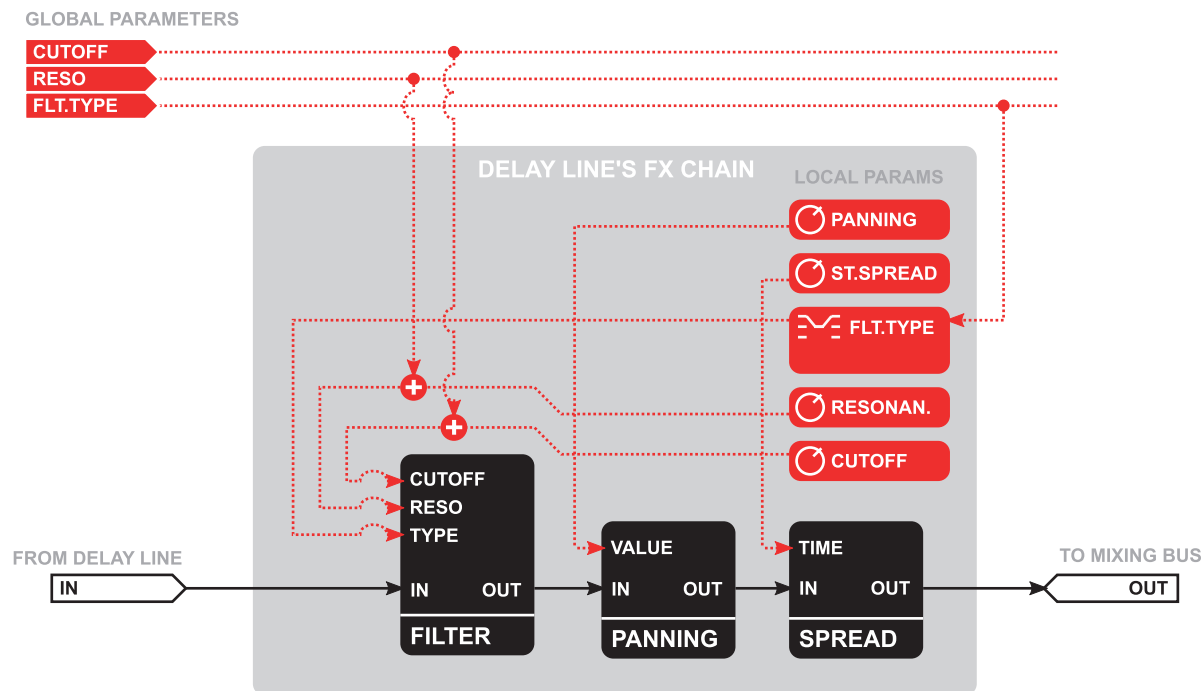

The effect of Mute Tap 1 Direct Signal parameter on the signal flow in the first delay line

Delay line's effect chain

The effect chain that is part of each delay line processes the signal when it leaves the feedback loop. The modules in the effect chain are:

- **Multimode filter**
- Stereo **Panning**
- Stereo **Spread**


Effect chain of a delay line

Multimode filter

Multimode filter is the first effect in the chain. It is controlled hierarchically:

- *Globally* – Influencing all delay lines simultaneously from the **Master** filter section where the following parameters can be edited:
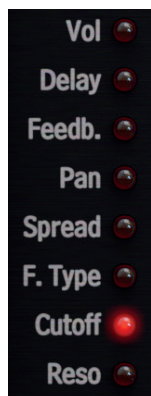

Master filter section

- **Cutoff** frequency

- Filter **Resonance**

- Filter **Type** – Where we have following values to choose from:

    - **LP – Low pass filter**

    - **BP – Band pass filter**

    - **HP – High pass filter**

    - **Off – Filter inactive**

- *Locally* – Influencing each delay line individually using the **bar graph display** on the left side of GUI
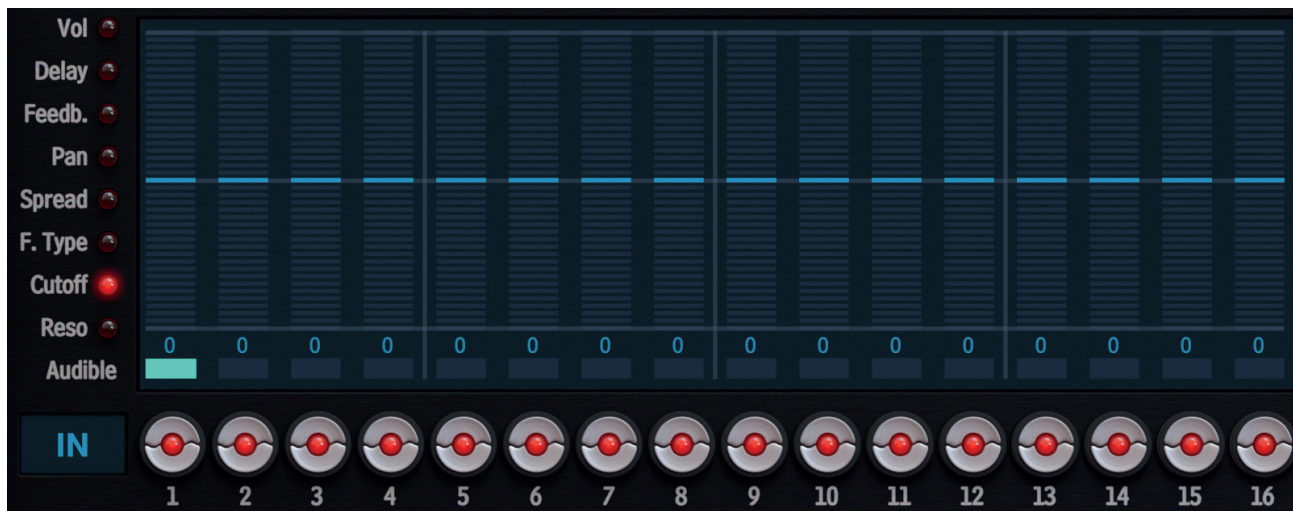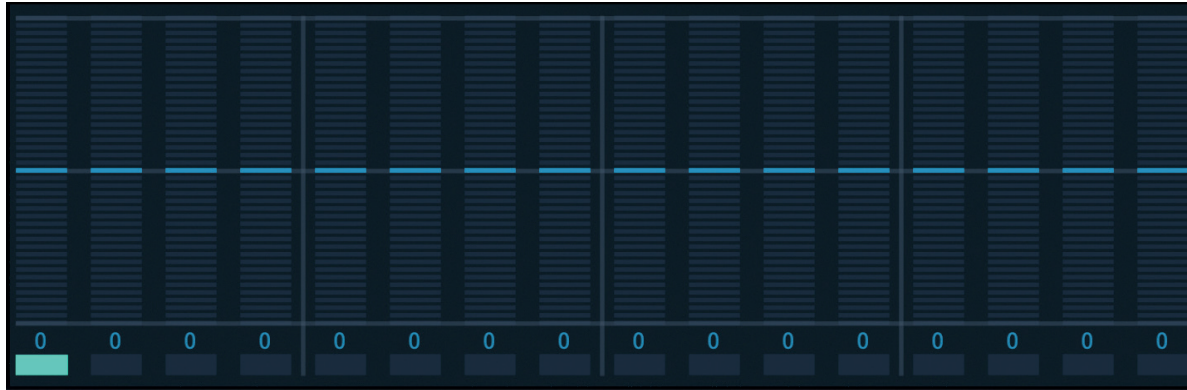
The Bar graph display

Filter cutoff

Local (per delay line) value of the **Cutoff** parameter is controlled via the **bar graph display** from the **Cutoff** view selected by the **View Selector**
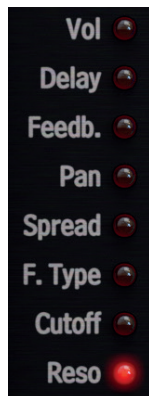

View Selector

A single bar represents the delay line's relative cutoff frequency value, a deviation from the value of **Cutoff** parameter in the **Master** section:

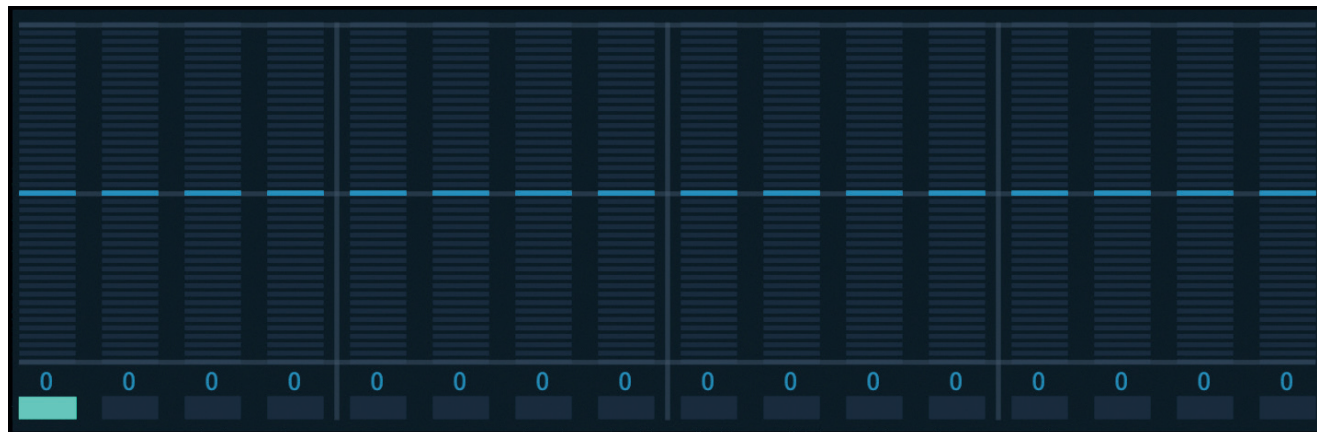*Relative values of the Cutoff for all delay lines*

Resonance

The *local* (per delay line) value of the **Resonance** parameter is controlled via the **bar graph display** from the **Reso** view selected by the **View Selector:**

View Selector

A single bar represents the delay line's relative **Resonance** value, a deviation from the value of **Resonance** parameter in the **Master** section:
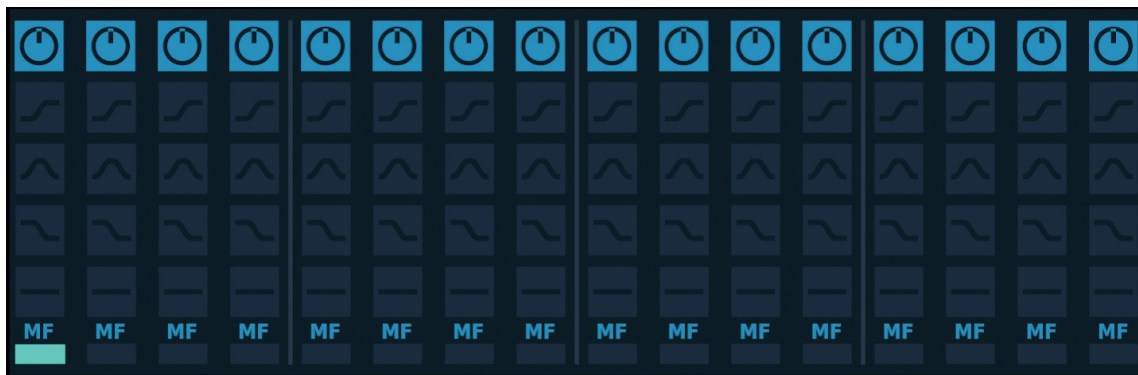

Relative values of the Resonance for all delay lines

Filter type

Selecting the **Filter type** *locally* (per delay line) is performed using the **bar graph display** from the **F.Type** view selected with **View Selector:**

View Selector

Per delay line Filter Type

The following types can be selected:

- / **HP – High pass** filter

- / **BP – Band pass** filter

- / **LP – Low pass** filter

- / **OFF –** Filter inactive

- / **MF –** Delay line filter type is the same as filter type selected in the **Master Filter** section.
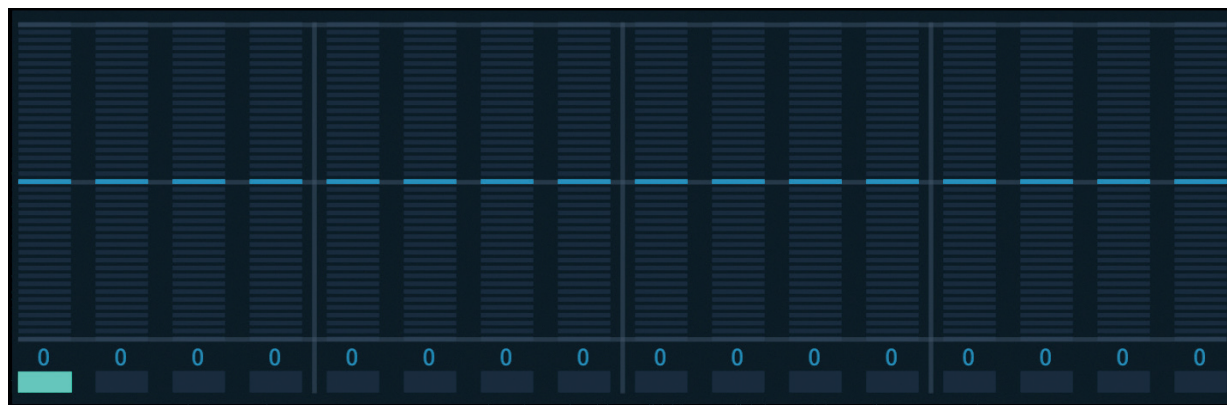

Master filter section

Panning

Stereo **Panning** is controlled only *locally* – per delay line. Editing is done via the **Bar graph delay** from the **Pan** view selected with **View Selector:**
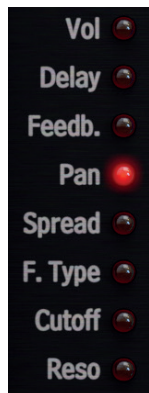
View Selector

Panning is controlled in the range **-100%** to **100%** (where **0%** means center of the stereo stage):

Panning values

Stereo spread

Stereo **Spread**, which is a phase shift between stereo channels, and creates the impression of widening the stereo image. It is controlled only locally – per delay line. Editing is done via the **Bar graph delay** from the **Spread** view selected with **View Selector:**
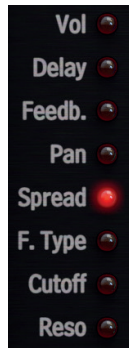

View Selector

Spread is controlled in range of **-100%** to **100%,** where **0%** means no spread at all.

-100% delays the left channel by ½ of the **Time grid value** with respect to the right channel and for **100%** the right channel is delayed by ½ of the **Time grid's** value with respect to left channel.
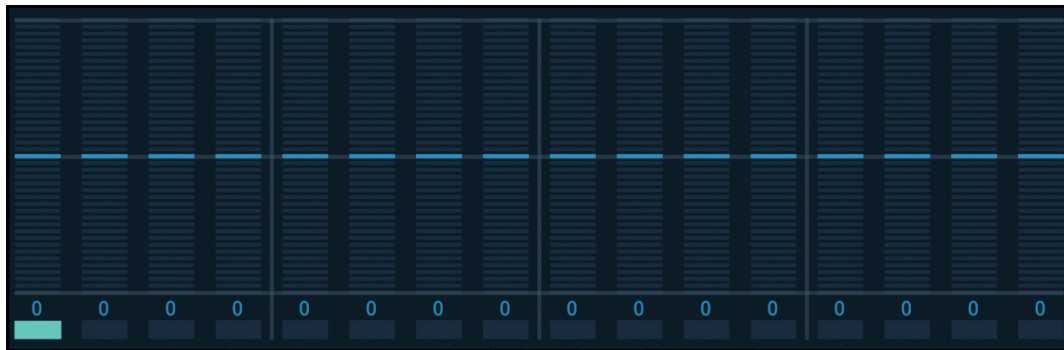
Stereo spread values

Mute buttons

Working in toggle mode, allow for quick muting of selected delay line.
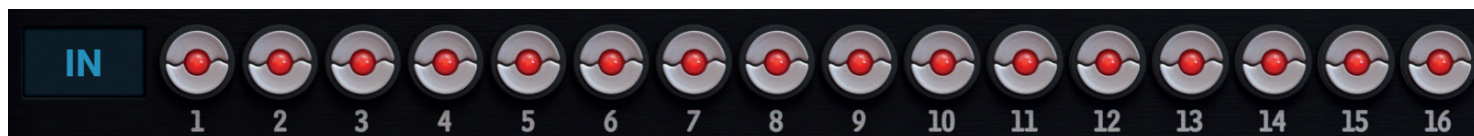
Mute buttons

In / Out

IN / OUT affects how the **Mute buttons** work.

- **IN** mode – a signal gets muted before it enters a delay line.

- **OUT** mode – a signal gets muted after it leaves a delay line.

In / Out display

Toggles between **In** and **Out** modes for **Mute buttons**

Mixing bus

The **Mixing Bu**s is the final module of the **Tekturon** signal processing path. It is responsible for controlling the volume of each signal leaving all **16** delay lines and then mixing them together.
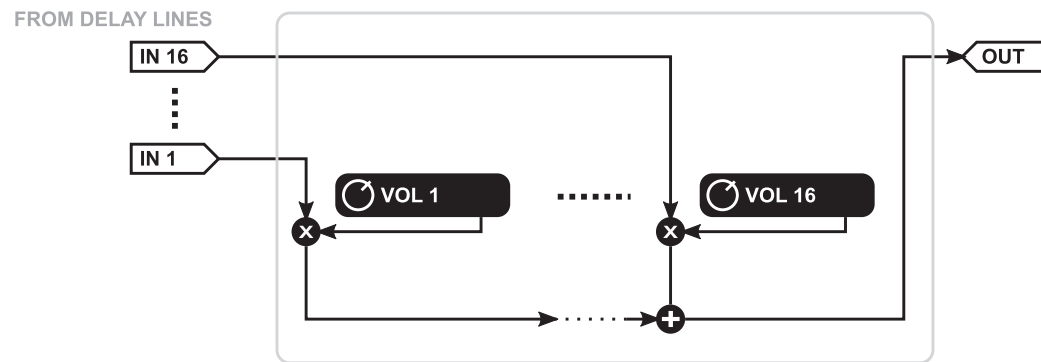
Mixing bus signal flow

The delay line outgoing signal **Volume** is adjusted via **Bar graph display** (the **Vol** view selected with **View Selector** parameter):

View Selector

Volume is in a range from **0%** to **100%** for each delay line independently:
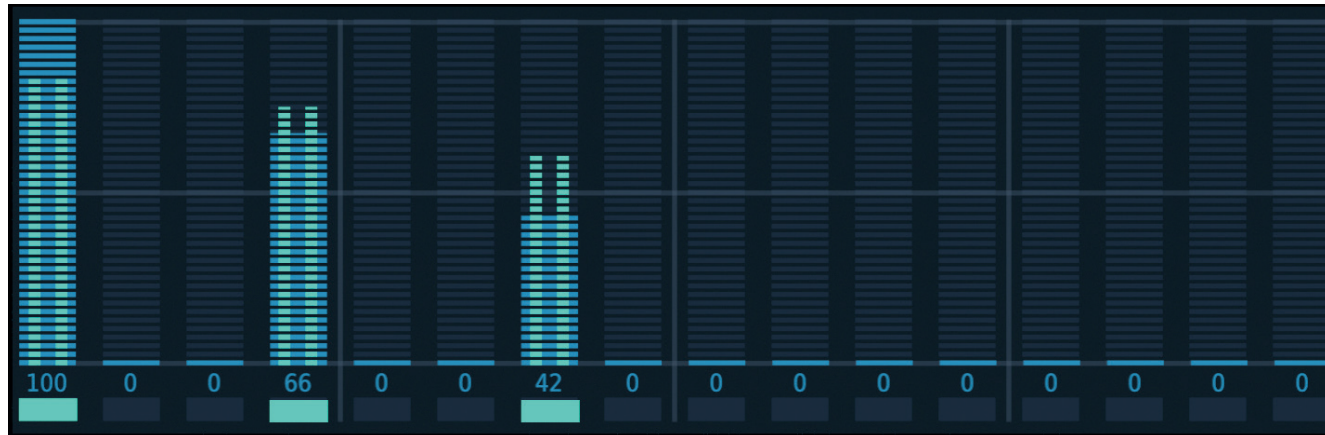
The delay lines' output volume values

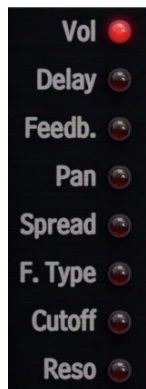Additionally, each bar also serves as a stereo VU-meter indicating (with a pale blue color) the level of the delay line output signal.

Audible lines

At the bottom of the display is the **Audible** row. This shows the active delay lines (with illuminated rectangles).

Audible controls

The prerequisite for a line to be considered as active is its **Volume** being set to a value greater than **0%**. The row is constantly displayed.

Master section

Master section

The **Master Section** is the final part of the processing path of **Tekturon**.

The **Output volume** controls the amplification of the output signal (in the range from **–inf** do **+12** *[dB]*) The **Output meter** shows volume level visually. **FX** controls the dry/wet ratio of the unprocessed to processed signal.

Padlock allows the **FX** setting to be locked so the **Dry/Wet** ratio stays the same when loading presets. It works in toggle mode: one click locks the parameter, a second click unlocks it.

FX padlock

Preset Management

Preset Storage

Presets – both those in the **Factory** library and those made by the **User** – are stored as files in specific folders on your hard drive. Every time the plugin is loaded, these folders are scanned and the presets they contain are consolidated in a linear structure in the **Preset Browser.**

Browsing Presets

The **Presets configuration and management** section enables easy navigation and browsing of the preset library.

Presets Configuration and Management Section

- **PRESET NAME** – Displays the name of the currently loaded preset.
- **PREV / NEXT** – Step backwards and forwards through the preset list (depending on the currently set filters – see below).
- <u>INIT</u> – *Win* (Ctrl + **PREV**), *Mac* (Cmd ⌘ + **PREV**) – Restore all plugin parameters to their initial settings.
- <u>RELOAD</u> – *Win* (Ctrl + **NEXT**), *Mac* (Cmd ⌘ + **NEXT**) – Reload the current preset.

- **SAVE** – *Win* ([Ctrl] + **BROWSE**), *Mac* ([Cmd ⌘] + **BROWSE**) – Save the current parameters as a new preset or overwrite the existing one (see below).
- **BROWSE** – Fold the **Preset Browser** panel out from the bottom of GUI.

The **Preset Browser** looks like this:

Preset Browser

One can see three main sections:

- **Content** – The available preset resources.
- **Filters** – View only certain categories or types of presets (inactive by default).
- **Results** – The list of presets that meet the criteria set by the **Filters.**

Content

Select preset resources for browsing. There are two resources available:

- **Factory** – The presets that are included with the plugin. **Factory** presets are read-only (ie, they can't be overwritten).
- **User** – Presets created by the user. **User** presets can be freely modified, backed up as files, shared with others, etc.

Selecting a single **Content** resource narrows the filtered preset list down to presets from that resource only.
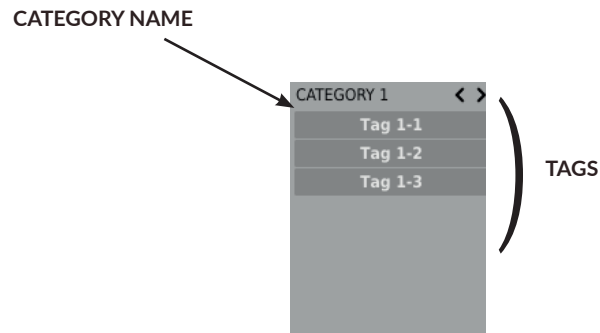
Preset Filters

The browser enables classification of presets through the use of **Categories** and **Tags**, in order to facilitate filtering of the **Results** list.
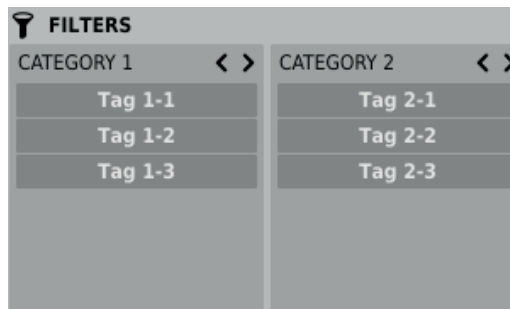
Preset Browser Category Filters

Categories and Tags

Each preset is assigned to one or more of a few common **Categories**. Within each **Category** there may be one or more **Tags**.
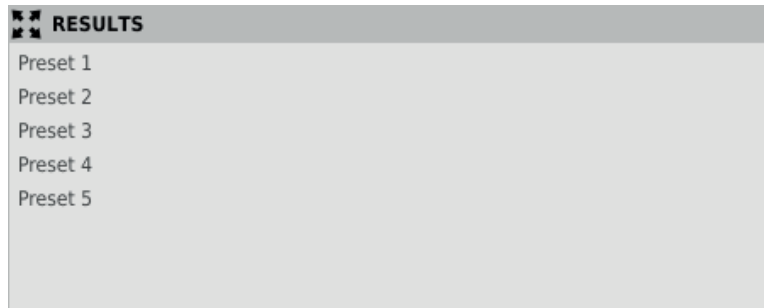
CATEGORY NAME

A single Category in a Filter with three Tags

The **Factory** presets come with **Categories** and **Tags** already assigned. These have been chosen to specifically describe the sounds and characteristics of those presets as representatively as possible, taking into account the remit of the plugin.

The **Categories** and **Tags** assigned to the **Factory** presets can't be edited. **User** presets, however, can be given **Categories** and **Tags** from the factory content, and you can also define your own custom **Tags**.

Results

The list of presets from the selected **Content** resources that meet the filtering criteria is displayed in the **Results** section. This is where the actual browsing and loading of presets is done (in the default **Browsing Mode**).
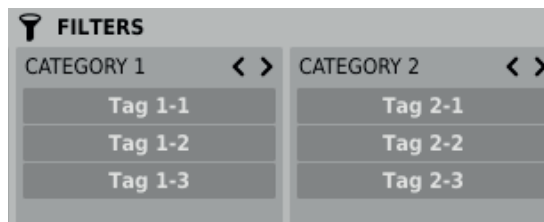
The Results section in the Preset Browser

Click the name of a preset to select and load it.

Double-click a preset to enter preset name edit mode. ▶

Presets Filtering

The columns in the **Filters** section represent particular **Category filters**, while the rows in each of these columns represent the **Tags** available within each **Category**.

Preset Browser Category Filters

The **Filters** cascade through the columns, from left to right: all presets in the selected Content resources are filtered according to the **Tags** in the first **Category** (the first column from the left), the remaining presets are then filtered by the **Category** represented by the second column, etc, up to the last active **Category Filter.**

▶ Possible only in the Edit Mode
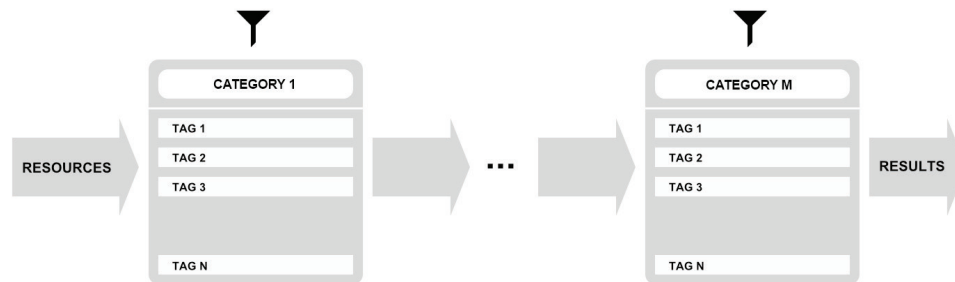
Preset Filtering with Category Tags

The result of this cascaded filtering process – ie, only the presets that meet the criteria of every active filter – is listed below, in the **Results** section.

Basic Actions on Filters

The **Tag** buttons in a **Filter** toggle between active and inactive when clicked: a grey **Tag** is inactive, and a teal blue **Tag** is active. A **Filter** is only active when at least one **Tag** in a column (**Category**) is active.

For example, if the first column in the illustration below represents the *Category* 1 **Category**, **containing** the *Tag 1-1*, *Tag 1-2* and *Tag 1-3* **Tags**, clicking the *Tag 1-1* Tag will activate the **Category Filter** *Category 1*, and narrow the preset list down to only the presets assigned the *Tag 1-1* **Tag** in the *Category 1* **Category**.
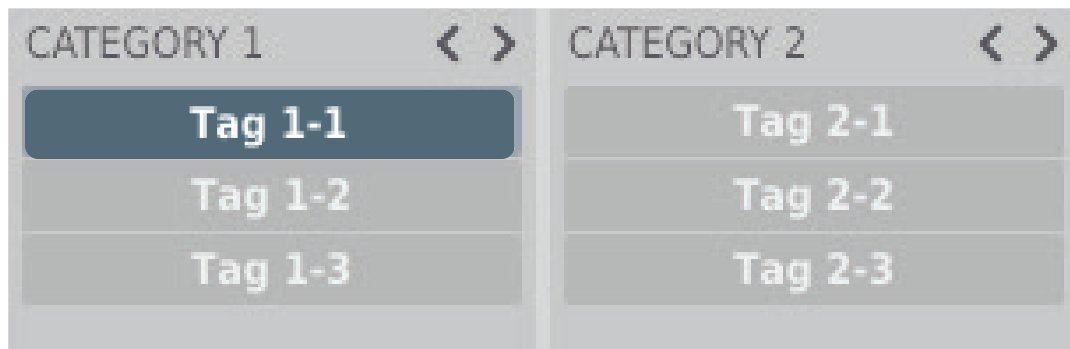
Enabling the 'Tag 1-1' Tag in the 'Category 1' Category

Clicking the *Tag 1-1* **Tag** again deactivates the **Filter**, so that all presets from the selected **Content** resources are displayed again.
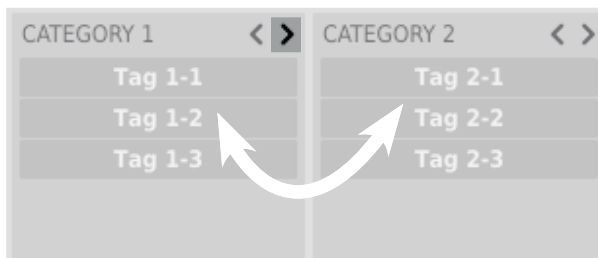
Reordering Categories

To the right of the **Category Filter** header are two arrow buttons:

Filter reordering

These move the **Category** left or right in the cascade. Clicking the right arrow swaps the current **Category** with the **Category** to the right; clicking the left arrow swaps the current **Category** with the **Category** to the left.


Presets Filtering with the Use of Categories Tags

Clicking the left arrow for the left-most **Category**, or the right arrow for the right-most category, does nothing, as the column has no predecessor/successor with which to swap.

Presets editing – Edit Mode

Activating **Edit Mode** in the **Preset Browser** enables the editing of preset names, **Categories** and **Tags**, as well as the deletion, export and import of presets. Note that these operations are only permitted for **User** presets, not **Factory** presets.

Enter and exit **Edit Mode** using the button in the bottom left-hand corner
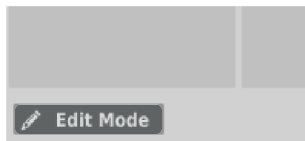
The Edit Mode button

In **Edit** mode, the **Preset Browser** changes in appearance and function:

The Preset Browser in Edit Mode

1. The **Filters** section changes becomes the **Edit Tags** section, which looks almost identical but is used to change – rather than operate – the **Categories** and **Tags** of the selected presets.

2. Presets (**User** only – not **Factory**) are selected for editing in the **Results** section.

3. The **Delete**, **Export** and **Import** buttons at the bottom of the interface are used to delete or export selected **User** presets, and import a set of presets to the **User Content** resource.

4. The resource selection in the **Content** section can't be changed, as editing is only possible for user presets.

Selection of presets for editing

You can edit presets one at a time or in groups. Select one or more presets in the **Results** section using the following procedure:

- **Click a preset** – Choose the preset from the list,
- *Win* (Ctrl + **Click a preset**), *Mac* (Cmd ⌘ + **Click the preset**)– Add another preset to the selection.
- Shift + **Click a preset** – Select a contiguous series of presets from the last one selected to the one clicked.

Editing Tags

Changing the Tags assigned to the selected preset(s)

With one or more presets selected, click a **Tag** button to assign it, or unassign it if already assigned.

Filters' tags

Selecting multiple presets with **Tags** assigned enables those **Tags** to be edited. If a particular **Tag** is assigned to *all* selected presets, it's marked with an intense teal blue color.

When a particular **Tag** is only assigned to *some* of the selected presets, it's given a pale teal blue colour.

All **Tags** that don't appear in *any* of the selected presets are coloured grey.

Colouring of Tags by status for selected presets

Changing the **Tag** status for one selected preset changes it to the same status for *all* selected presets. The change of status is indicated by an asterisk (*) to the left of the **Tag** buttons.

Notification of changes to the Tag status of selected Presets

User edits don't have to be confirmed. They're indicated by asterisks next to the edited **Tag**.

Preset name editing

Double-click the name of a preset to enter name editing mode.

Deleting presets

Selecting one or more presets invokes the **Delete** button at the bottom left corner. Click this to delete the selected presets.

Preset export and import

Use the **Export** and **Import** buttons at the bottom of the **Preset Browser** to export the presets selected in the **Results** section as a package, or import a previously exported ▶ package into the Preset library.

▶ Export and Importare possible only for presets from User resources.

Saving the current settings as a preset

To save the current plugin parameter settings as a **User** preset click **BROWSE** in the **Configuration and Presets Browsing** section while holding -*Win* ([Ctrl] + **BROWSE**), *Mac* ([Cmd ⌘] + **BROWSE**) in **Configuration and Presets Browsing** section. The **Preset Browser** will automatically open in **Edit Mode**.

Saving the settings as a preset

Enter a name for your newly created preset in the text field at the bottom, then confirm it by clicking **Save**, or back out of the process by clicking **Cancel**.

As the **Preset Browser** automatically enters **Edit Mode**, you can immediately categorize the preset using the **Edit tags** functions before saving it.

Configuration

Parameter settings

Right-click any plugin parameter to open its contextual menu.
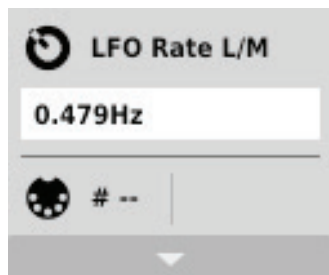
Closed contextual menu

Using this, you can:

- Check the name and current value of a parameter,
- See whether or not the parameter has been assigned a MIDI CC number, and if so, which one,
- Link the parameter to a MIDI CC number.

Clicking the arrow strip at the bottom of the menu expands it to display all available options. Right-clicking the parameter again or left-clicking outside the menu area closes the contextual menu.

MIDI Learn

The **MIDI Learn** function enables quick assignment of physical MIDI controllers to plugin parameters. An assignment is made by following this procedure:

1. Right-click the parameter you want to assign to your hardware MIDI controller. The contextual menu opens.
2. Click the arrow strip at the bottom to expand the contextual menu.
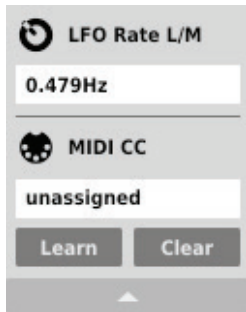
Expanded contextual menu

3. Click the **Learn** button to put the plugin into a pending state, awaiting MIDI CC input from your hardware MIDI controller
4. Move the relevant knob or slider on your MIDI controller to make the assignment
5. Click **OK** to save the change or **Cancel** to restore the previous setting

MIDI Unlink

To delete the MIDI CC assignment for a plugin parameter:

6. Open the contextual menu by right-clicking the parameter in question
7. Expand the menu by clicking the arrow strip at the bottom
8. Click the **Clear** button
9. Confirm with **OK** button

Current settings

The **Current settings** are applied separately to each instance of the plugin but initialized with the **Default settings** when the plugin is loaded (see next chapter).

The **Current settings** are adjusted in the status bar at the bottom of the interface.

The Current settings in the status bar

From left to right, they comprise:

* The **Current processing path quality** for **Offline** and **Real-time** modes
* Saving/Loading of the **MIDI CC Map**
* A choice of two **GUI** sizes

Processing Path Quality

Set the **Current quality** of the plugin's generated output for **Real-time** and **Offline** modes.
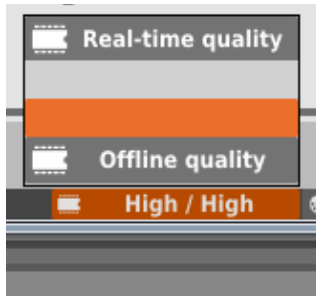
Choosing the plug-in interface size

There are few quality levels available for each mode.

MIDI CC Map

Save all current MIDI CC parameter assignments as a MIDI Map file, or load an existing MIDI Map file into the plugin.
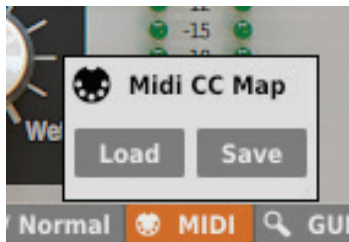
Saving/loading the MIDI CC Map

GUI size

Switch the graphical user interface between few different sizes.
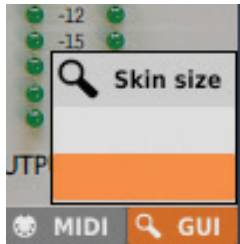
Choosing the plug-in interface size

Default settings

Change the **Default settings** of the plugin in the **Options** panel. The **Current settings** of every new instance of the plugin are initialized to the **Default settings**.

The **Default settings** are stored in a configuration file. This file is updated every time you close the **Options** window.

Open the **Options** panel by clicking the **Options** button:
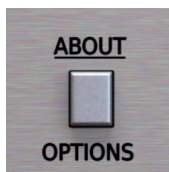
Options button

The **Options** panel is made up of four sections, only one of which can be expanded at a time.

Options Panel

The four sections are:

- **Processing Quality** - The default Processing Path quality
- **Presets** - The preset loading warning dialog status
- **MIDI** - The default MIDI CC Map
- **User Interface** - The default GUI size

Processing Quality
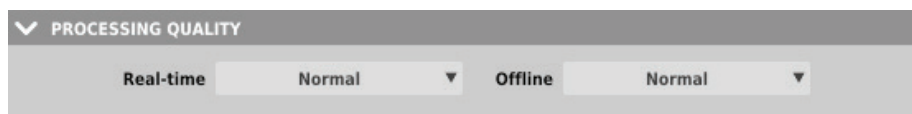
Processing Quality Choice Section

In this section, you can configure the default quality of the processing path for the **Real-time** mode and **Offline** modes.

MIDI

Default MIDI Map Choice Section

Set the path to a default **MIDI Map** file. Clicking the **MIDI CC** Map checkbox 'unlocks' the **Browse** button and activates the selected MIDI Map.

User Interface
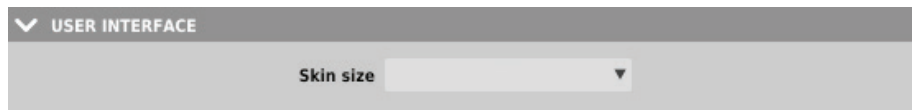
Processing Quality Choice Section

Choose one of several default GUI sizes to best match the plugin to the resolution of your computer monitor.

Presets
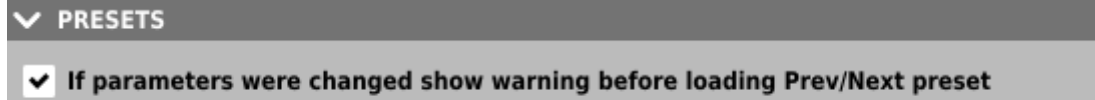
Displaying confirmation dialog option

With the box checked, clicking the **Prev** or **Next** preset button after the parameters of the current preset (or previously initialized state) have been changed pops up a confirmation dialog to prevent accidental loss of those changes.

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